

WHAT IS CLAIMED IS:

1 1. A light source for examination of a substance which emits light at a wavelength
2 greater than a wavelength of light emitted from the light source when the substance is excited
3 by the wavelength of light emitted from the light source, the light source comprising:
4 a housing having a light outlet; and
5 a low-voltage lamp positioned in the housing and oriented to emit light through the
6 light outlet, wherein the lamp is capable of being connected to a source of electrical power,
7 wherein the low-voltage lamp emits light of a wavelength within a predetermined
8 range effective to enhance the detection of emission of light from a substance when the
9 substance is excited by the wavelength of light emitted from the lamp.

1 2. The light source of claim 1, wherein the low-voltage lamp is a low heat generating
2 lamp.

1 3. The light source of claim 1, wherein the low-voltage lamp is a light emitting diode.

1 4. The light source of claim 3, wherein the light emitting diode is a non-diffused type
2 light emitting diode.

1 5. The light source of claim 3, wherein the light emitting diode is a diffused type light
2 emitting diode.

1 6. The light source of claim 1, wherein the housing includes a reflector, the lamp
2 being between the reflector and the light outlet.

1 7. The light source of claim 1, wherein the reflector is a parabolic reflector.

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1 8. The light source of claim 1, wherein the low-voltage lamp emits light primarily in
2 the blue wavelength range.

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1 9. The light source of claim 1, wherein the low-voltage lamp emits light primarily in
2 the ultraviolet wavelength range.

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1 10. The light source of claim 1, wherein the wavelengths of light emitted from the
2 lamp is substantially between 300 and 500 nanometers.

11. The light source of claim 1, wherein the source of electrical power is a battery.

12. The light source of claim 1, further including a filter lens mounted on the housing.

13. The light source of claim 1, wherein the filter lens is a dichroic filter.

1 14. A light source for examination of a substance which emits light at a wavelength
2 greater than a wavelength of light emitted from the light source when the substance is excited
3 by the wavelength of light emitted from the light source, the light source comprising:

4 a housing having a light outlet; and

5 a low heat generating lamp positioned in the housing and oriented to emit light
6 through the light outlet, wherein the lamp is capable of being connected to a source of
7 electrical power,

8 wherein the low heat generating lamp emits light of a wavelength within a
9 predetermined range effective to enhance the detection of emission of light from a substance
10 when the substance is excited by the wavelength of light emitted from the lamp.

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1 15. The light source of claim 14, wherein the low heat generating lamp is a low-
2 voltage lamp.

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1 16. The light source of claim 14, wherein the low heat generating lamp is a light
2 emitting diode.

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1 17. The light source of claim 14, wherein the low-voltage lamp emits light primarily
2 in the blue wavelength range.

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1 18. The light source of claim 14, wherein the low-voltage lamp emits light primarily
2 in the ultraviolet wavelength range.

1 19. The light source of claim 14, wherein the source of electrical power includes a
2 battery.

1 20. A method of detecting a leak in a system containing a substance capable of
2 emitting an emission wavelength of light after being excited by an excitation wavelength of
light, the method comprising:

3 providing light within a predetermined wavelength range from a light source to a leak
4 site, the light emitted from a low-voltage lamp, wherein the lamp is capable of being
5 connected to a source of electrical power; and
6 detecting emission of light from the substance.
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